Abstract

This paper presents new method to visualize medical images data sets by using the properties of continuity and trustworthy dimensional reduction methods. Continuity and trustworthy dimensional reduction methods are well-known promising nonlinear methods are used to visualize different data sets, as medical images. However, their visualizations face the problem of false colors which lead the specialist to make wrong analysis of patient status. To overcomes these errors, we will combine these two methods in one to generate hybrid method has continuity and trustworthiness properties. The proposed method produces best visualization by perfect preserving the corresponding color distances between visualization and original data sets in high-dimensional space. The application of hybrid method shows it is interested for visualizing medical images data sets. It has been compared with the continuity methods (as Isomap) and the trustworthy method (as curvilinear distance analysis (CDA)). The results proves the efficiency of of the proposed method in visualizing medical images data sets, where the false colors in the visualization are overcome as well as possible. The experiments shows the hybrid visualization has more chances to discover the true colors of the medical images
data sets.

References

Index Terms

Computer Science  Image Processing

Keywords

Visualization, Medical images, Dimensionality reduction, Isomap, CDA